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## Introduction

Located near the end of De Saxe Cl, Thornleigh, within Berowra Valley Regional Park are the remnants of Thornleigh Quarry. The quarry began when prominent railway contractors Amos & Co won the contract to construct the Homebush to Waratah line in 1883. They used the quarry to obtain white metal – metamorphosed sandstone for ballast.

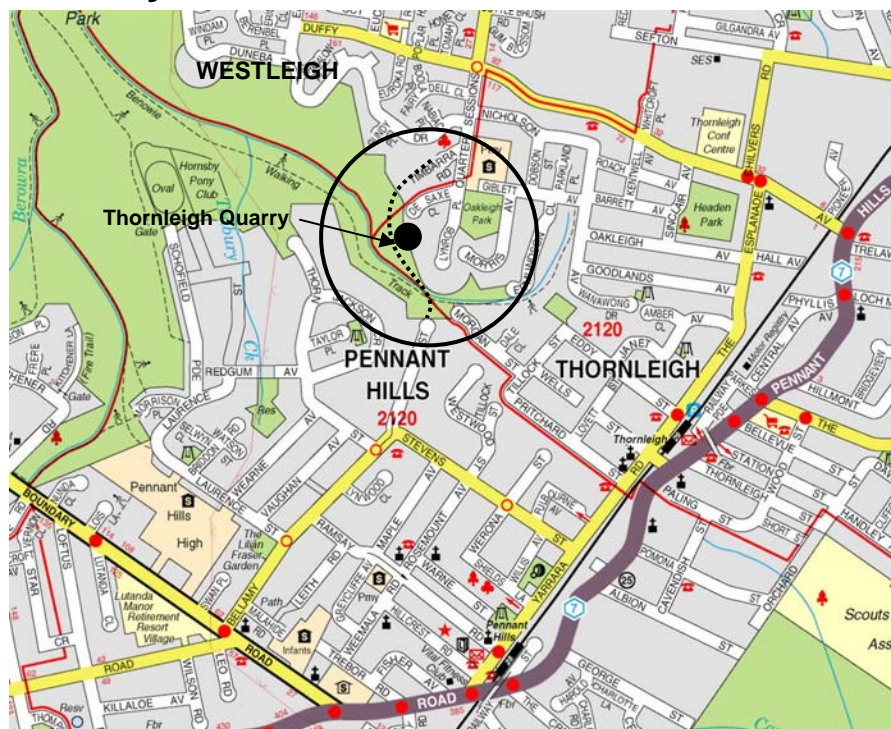
The quarry is located within 1 km, North West of Thornleigh Station, through some steep terrain, 30m below the station level. To overcome problems with a steep gradient, a zig zag siding was built to the quarry from the main line near Thornleigh Station. However, land subdivision has since occurred and most of the line (except for a short section adjacent the quarry) has been built over.

This was the third and last zig zag railway built in NSW. The other two being Lapstone in 1867 and the great Zig Zag at Lithgow in 1869.

The quarry is adjacent to a cycleway constructed by Hornsby Shire Council with interpretive signs relating to the zig zag railway and the quarry.

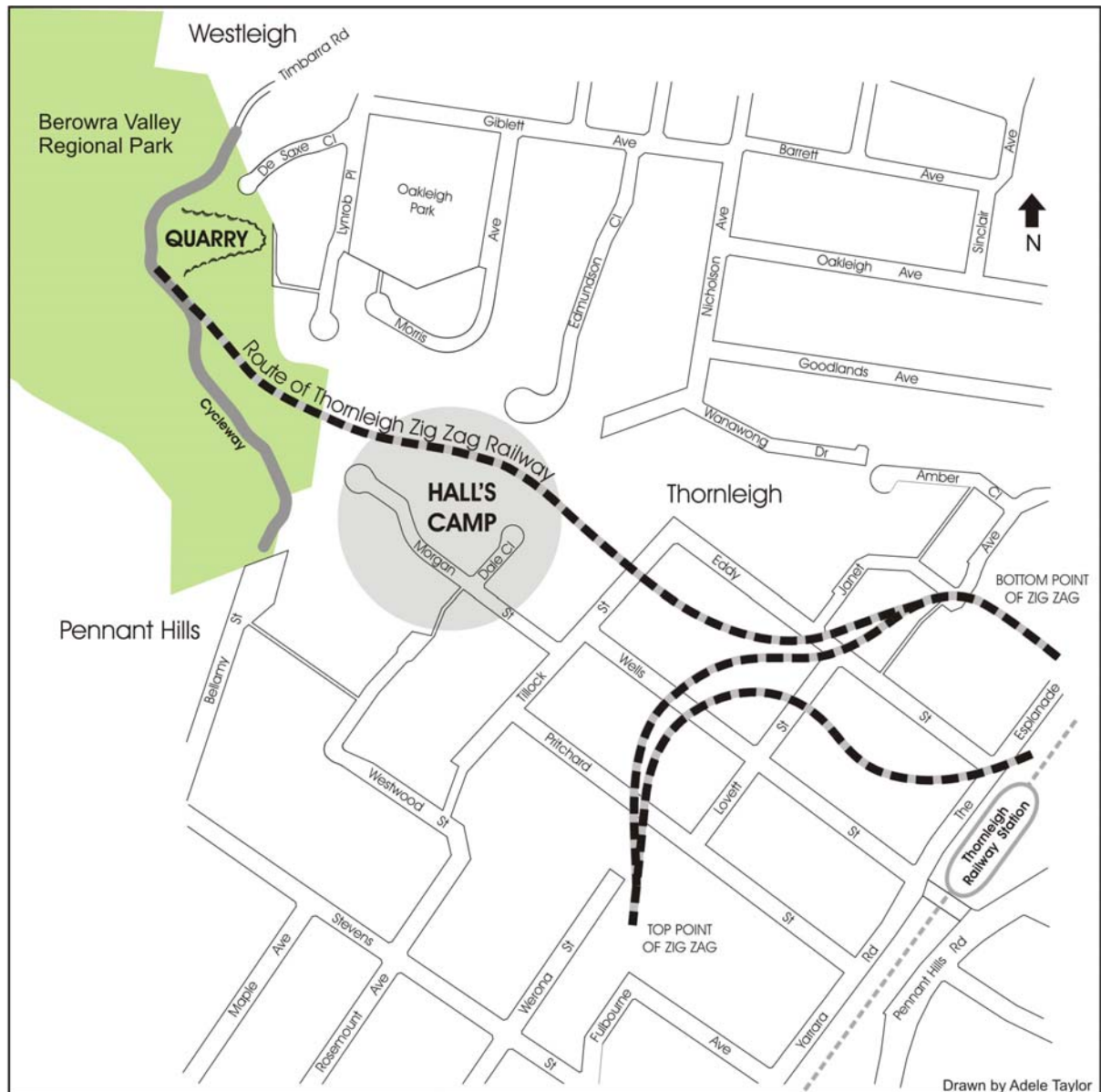
The following assessment is based substantially upon the Historical & Archaeological Assessment of Proposed Cycleway, near Thornleigh Quarry, via De Saxe Close, Thornleigh, Berowra Valley Regional Park NSW by Edward Higginbotham & Associates.

## Locality Plan



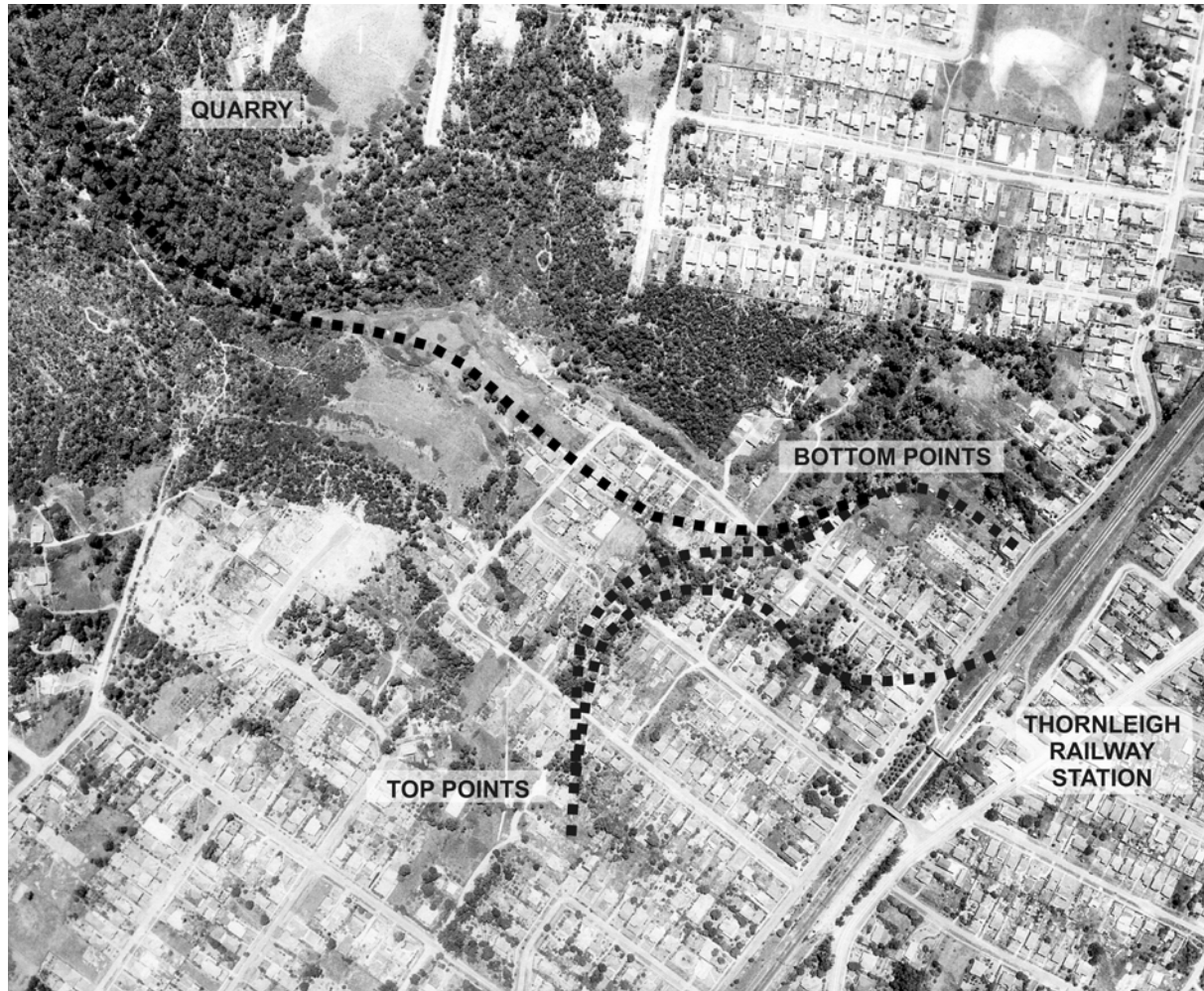
^ Map shows location of Thornleigh Quarry in relation to Thornleigh Station

## Site Map



Plan Showing Thornleigh Zig Zag Railway Route

Aerial Photo 1955



THORNLEIGH ZIG ZAG RAILWAY Circa 1880 - Photo 1955

## Plaque Nomination Form

Name of work: **Thornleigh Quarry and Zig Zag Railway**

The above-mentioned work is nominated to be awarded a **Historic Engineering Marker**

Location, including address and map grid reference if a fixed work:

**Quarry – Berowra Valley Regional Park, end of De Saxe Cl, Thornleigh**

**MGA Zone 56 321,055E , 6,266,561 N**

**Zig Zag (now under residential subdivision) –**

**Pritchard, Wells, Eddy & Lovett Streets, Thornleigh**

**MGA 322,050E, 6,266,145N to 321,374E, 6,265,881N**

Owner (name & address): (Quarry) - **National Parks & Wildlife Service, NSW  
PO BOX 3031, ASQUITH NSW 2077**

The owner has been advised of this nomination, and a letter of agreement will follow.

Access to site: **End of De Saxe Cl, Thornleigh, along cycleway  
End of Bellamy St, Pennant Hills, along cycleway or End of Timbarra Rd, Westleigh,  
along cycleway.**

Nominating Body: **Hornsby Shire Council**

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*General Manager Hornsby Shire Council*

Date: \_\_\_\_\_

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Chair, Sydney Engineering Heritage Committee

Date: \_\_\_\_\_

The Administrator  
Engineering Heritage Australia  
Engineers Australia  
Engineering House  
11 National Circuit  
BARTON ACT 2600

# PLAQUING NOMINATION ASSESSMENT FORM

## 1 BASIC DATA

**Item Name:** THORNLEIGH QUARRY AND ZIG ZAG RAILWAY

**Other/Former Names:** Amos Quarry

**Location:** MGA Zone 56 321 055 E 6 266 561 N

**Address:** End of De Saxe Cl, Thornleigh NSW

**Suburb/ Nearest Town:** Thornleigh,

**State:** NSW

**Local Govt Area:** Hornsby

**Owner:** National Parks & Wildlife service

**Current Use:** Regional Park

**Former Uses:** Quarry

**Designer:** Amos & Co

**Maker/ Builder:** Amos & Co

**Year Started:** 1883

**Year Completed:** 1899

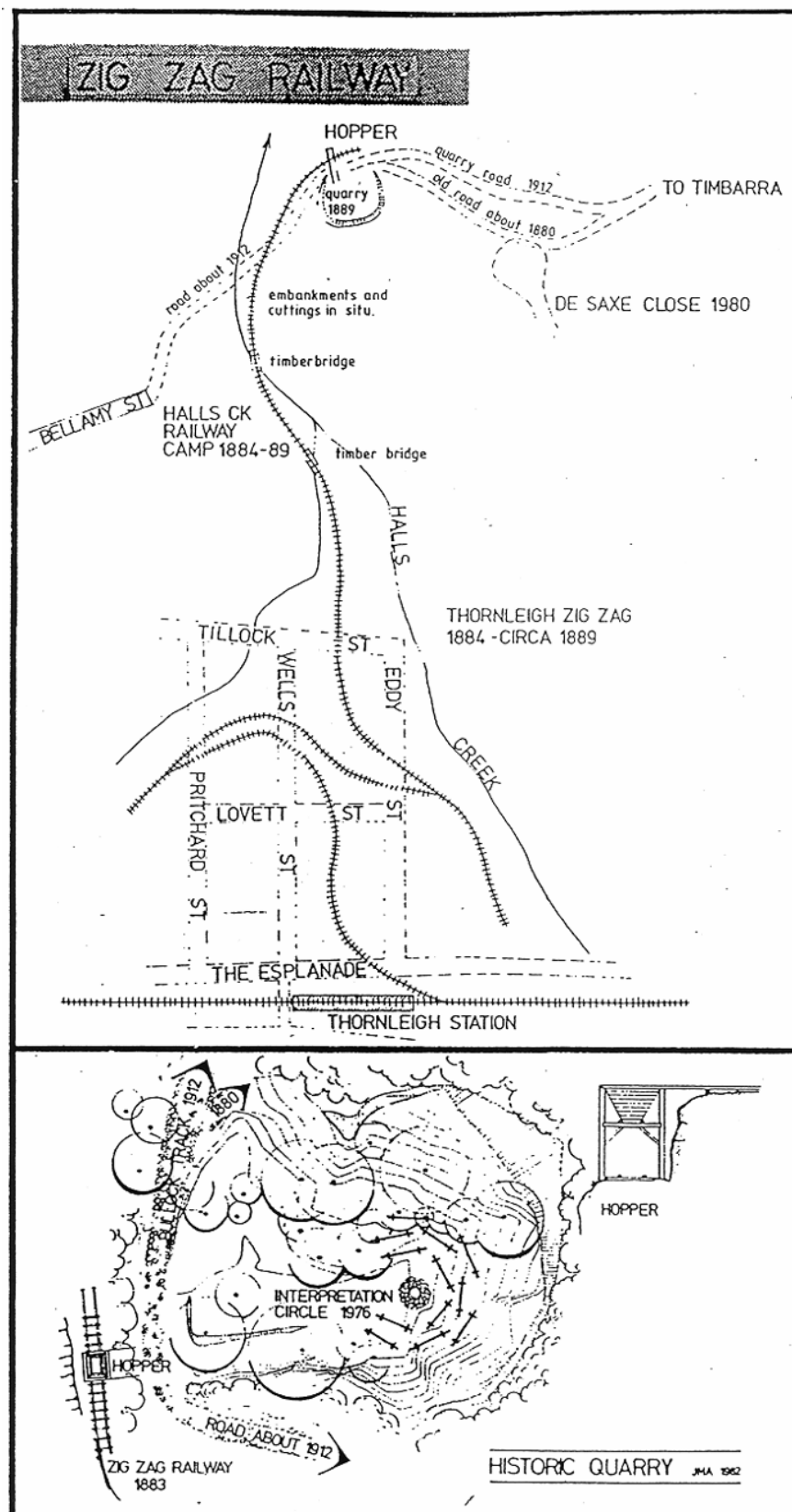
**Physical Description:** Thornleigh Quarry is surrounded on three sides by sandstone rock faces, rising about 10m from the base of the quarry. There is an existing interpretation circle in the middle of the quarry installed by the Pennant Hills Apex Club in 1976.



Photo Source: Michael Bickford Hornsby Shire Council

On the south side of the quarry is a wide trench, which is the remnant route where the stone was hauled towards the stone crusher and railway siding. The zig zag siding connected the quarry with the main railway line.

Source: A Guide to Elouera Bushland National Park (1983)



**Physical Condition:** The Quarry itself is in a good condition. It is also still possible to find the start of the line at the quarry end, now located several metres below the level of the current bike trail.  
Most of the zig zag rail line has vanished under regenerating bush and residential development, however remnants of the railway formations are still visible within the regional park. In areas where residential development has occurred, only impressions remain along existing topography/road profile. (see images section)

**Modifications and Dates:** **1880** The first road leading into the quarry was built

**1883** Construction of the Thornleigh Zig Zag. Thornleigh Quarry supplied ballast for the Homebush to Waratah line (later named the Main Northern Line)

**1889** Amos & Company completed their railroad contract. Thornleigh Quarry laid idle

**1891** Angus & Monie and Ahearns's revitalise the quarry and zig zag using them for railway work at Clyde and Liverpool

**1912** A second road down the quarry is built to compensate for the deepening of the quarry. The quarry is now used for railway duplication works.

**1950's** Zig zag railway line is built over by new residential sub-division

**1976** Pennant Hills Apex Club Builds an Interpretation Circle in the old quarry

**2005** A cycleway and interpretation signage is constructed adjacent the quarry.

**Historical Notes:** Thornleigh Quarry arose from the decision by the New South Wales Government to build a railway linking Sydney to Newcastle. Assent was formally given in 1880 for the construction of the Homebush to Waratah railway as it was formally titled by the act, which provided funding for the work

The contract to construct the Strathfield to Hawkesbury River section of the line was awarded on 1 May 1883 to Amos & Co. This company established its main camp for the workers at Hall's Creek, Thornleigh. Adjacent to it, they also opened Thornleigh Quarry.

<b>Listings:</b>	State Heritage Register NSW	Not listed
	State Heritage Inventory NSW	Listed
	NPWS Heritage & Conservation Register	Not listed
	Hornsby LEP	Listed

## 2 ASSESSMENT OF SIGNIFICANCE

<b>Historic Phase:</b>	<p>Thornleigh Quarry and its zig zag railway supplied ballast in the initial works associated with the construction of the Homebush to Waratah Railway in the 1880's – later known as the Great Northern line.</p> <p>The peak period of use was 1883-1886 when the Main Northern Line reached Hornsby Junction. From 1885 the Public Works Department of NSW used the quarry as a source of road metal. It was reopened in 1891 to supply ballast for the Hornsby to St Leonards line and was in use in 1892 when the main northern line was duplicated. With railway construction moving further north, the zig zag railway became disused. After 1906, Hornsby Shire Council used access roads to haul road ballast until 1920's</p>
<b>Historic Association:</b>	<p>The construction of the quarry &amp; zig-zag siding were associated with the prominent railway contractors of the period, namely Amos &amp; Co. They were the principal contractor for the Main Northern Line and for six of the 12 iron lattice bridges in NSW. The quarry was later associated with Angus &amp; Monie, the contractor for various railway duplication works.</p>
<b>Creative or Technical Achievement:</b>	<p>The zig-zag was a practical solution to obtaining direct access to the main railway line, some 30m below. The zig zag itself represents a technology that was applied only twice prior to Thornleigh in NSW i.e., on the great Western Railway Line over the Blue Mountains. However, these were main line constructions.</p>
<b>Research Potential:</b>	<p>The site of Hall's Camp, in close proximity to the quarry was a typical construction camp. These camps were associated with major construction works on railways, water supply or dam construction. The site of Hall's Camp has archaeological potential, in that investigations could reveal evidence on the working and living conditions associated with construction camps.</p> <p>Very little is known about the Thornleigh Zig Zag as this relic has long disappeared under residential development. From time to time new evidence is uncovered on the site. It is hoped that one day, some photographic records will appear of this site. The quarry has little potential to yield information about quarry technology.</p>
<b>Social:</b>	<p>The quarry &amp; zig zag railway played an important role in works associated with the Railway in the 1880s-90s. It was a source of employment and the main railway line ultimately contributed to the creation of Hornsby Shire.</p>
<b>Rarity:</b>	<p>The 1883 Thornleigh zig zag is significant as it was the third in NSW after the little zig zag at Laptone and the Great zig zag at Lithgow. It represents a practical construction solution to overcome the problem of steep terrain.</p>
<b>Representativeness:</b>	<p>The quarry &amp; associated zig zag line are indicative of the industrial practices and construction techniques of the early 1900s.</p>
<b>Integrity/Intactness:</b>	<p>The quarry is substantially intact. Unfortunately, the upper reaches of the zig zag siding have been destroyed under residential development. Some remnants where the railway track crossed later streets and where the street gradients have been flattened, can be identified, assisted by aerial photography. Remnant railway track formation can also be found within Berowra Valley Regional Park, especially to the south east of the quarry running towards Halls Creek.</p>

## References

Author	Title
Briony Mitchell	Heritage Conservation Plan PLAN3021
Edward Higginbotham & Assoc	Historical & Archaeological Assessment of Proposed Cycleway, near Thornleigh Quarry, via De Saxe Cl, Thornleigh, Berowra Valley Regional Park NSW
Mark Hood	Conservation Management Plan for Thornleigh Quarry And Zig-Zag Railway
Ralph Hawkins	Research Notes.

## Statement of Significance

The 1883 Thornleigh Zig Zag Railway is significant as it was only the third Zig Zag in NSW after the little Zig Zag at Lapstone and the Great Zig Zag at Lithgow. The quarry and zig zag railway played an important role in works associated with the construction of the Homebush to Waratah Railway in the 1880s.

The construction of the railway siding and zig-zag to the quarry, were associated with prominent railway contractors Amos & Co, and later Angus & Monie.

The site has value to the local & regional community because of its association with railway infrastructure and Hornsby Shire's cultural history. Historically this resource demonstrates ingenuity with the design of a unique and rare example of a zig-zag railway.

**Assessed Significance:** Local

## Images



view of remnant track formation before & after 2004 bush fires  
Source; Warks, Railpage Australia Gallery [www.railpage.com.au](http://www.railpage.com.au)



View of Wells St being the route of the old track – Source; Michael Bickford, Hornsby Shire Council



View inside quarry – Source; Michael Bickford, Hornsby Shire Council

## Proposed Citation

### HISTORIC ENGINEERING MARKER

#### Thornleigh Quarry and Railway Zig Zag

Thornleigh quarry and its associated zig zag railway was constructed in 1883 by prominent railway contractors Amos & Co. The purpose was to supply stone ballast for construction of the Homebush to Waratah railway line. The ballast was called 'white metal' – a metamorphosed sandstone. The zig zag overcame steep grades from the quarry to the main line near Thornleigh station. It was the third and last railway zig zag in NSW, the others being on the Great Western Railway Line over the Blue Mountains

The Institution of Engineers Australia  
Hornsby Shire Council  
National Parks and Wildlife Service, NSW 2006

## Appendices

	Author	Title
<b>Appendix 1</b>	Briony Mitchell	Heritage Conservation Plan PLAN3021
<b>Appendix 2</b>	Edward Higginbotham & Assoc	Historical & Archaeological Assessment of Proposed Cycleway, near Thornleigh Quarry, via De Saxe Cl, Thornleigh, Berowra Valley Regional Park NSW
<b>Appendix 3</b>	Mark Hood	Conservation Management Plan for Thornleigh Quarry And Zig-Zag Railway
<b>Appendix 4</b>	Ralph Hawkins	Research Notes.